

1 Amendments to the claims:

2 1. (currently amended): An optical switch array assembly comprising:
3 a silicon substrate,
4 an optical switch array disposed in the silicon substrate,
5 a driving circuit integrated in the silicon substrate with the optical switch array
6 and forcing the optical switches on and off, and
7 a plurality of holes on the backside of the silicon substrate each aligned with an
8 optical switch and guiding an optical beam to the optical switch, and
9 a glass plate mounted on the top of the silicon substrate.

10 2. (cancelled)

11 3. (cancelled)

12 4. (original): An optical switch array assembly of claim 1 further comprising a plurality
13 of DNA probes disposed on the surface of the glass plate.

14 5. (original): An optical switch array assembly of claim 1 further comprising a plurality
15 of hybridized DNA probes disposed on the surface of the glass plate.

16 6. (currently amended): An optical switch array assembly ~~according to claim, where~~
17 ~~said optical switches are Fabry-Perot cavity based optical switches~~ comprising:
18 a silicon substrate,
19 an optical switch array disposed in the silicon substrate, wherein each of the
20 switches in said array is a Fabry-Perot cavity based optical switch,

21 a driving circuit integrated in the silicon substrate with the optical switch array
22 and forcing the optical switches on and off, and
23 a plurality of holes on the backside of the silicon substrate each aligned with an
24 optical switch and guiding an optical beam to the optical switch.

25 7. (original): An optical switch array assembly according to claim 4, where said DNA
26 probes are light-synthesized DNA probes.

- 1 8. (cancelled)
- 2 9. (original): An optical switch array assembly according to claim 4, where said light
- 3 beams are directed to sites where said DNA probes are light-synthesized.
- 4 10. (original): An optical switch array assembly according to claim 5, where said light
- 5 beams are directed to sites where said hybridized DNA probes are light-detected.
- 6 11. (withdrawn)
- 7 12. (withdrawn)
- 8 13. (withdrawn)
- 9 14. (withdrawn)
- 10 15. (withdrawn)
- 11 16. (withdrawn)
- 12 17. (withdrawn)
- 13 18. (withdrawn)
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- 16 21. (withdrawn)
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